the large number of persons who have been privileged to collaborate with Dr. Haldane. To that company the book will mean something more than a mere recapitulation of his work or a history of the development and philosophic position, or a commentary on the action and reaction of abstract science on industrial research; it will mean something a little sacred, but something which one of them, at all events, finds some difficulty in putting into words. Joseph Barcroft.

Our Bookshelf.

An Introduction to Sedimentary Petrography: With special reference to loose Detrital Deposits and their Correlation by Petrographic Methods. By Henry B. Milner. Pp. 125. (London: T. Murby and Co., 1922.) 8*s.* 6*d.* net.

This attractive little book deals mainly with loose detrital deposits and their correlation by petrographic methods. The first chapter gives an account of sampling, treatment, and methods of examination in about a dozen pages. The next chapter (56 pages) deals with detrital minerals and is illustrated by numerous plates showing the shapes and appearances of loose grains and crystals. Following this are two chapters in which a courageous effort is made to show the value of the evidence provided by detrital minerals as a means of stratigraphical correlation, and as an aid in palæogeographical studies. A useful bibliography, a table showing the distribution of detrital minerals in British strata, and an index are included.

It is not easy to share Mr. Milner's confidence in the inferences he draws from the evidence provided by the mineral composition of sediments. Such evidence is rather unsafe as a basis of stratigraphical correlation, owing to the rarity and local significance of instances in which detrital minerals are derived from what he calls "homogeneous distributive provinces." The difficulty of generalising safely on the genesis of detritus is illustrated very forcefully by Mr. Milner's statement that a garnet-staurolite-kyanite suite suggests derivation from a definite thermo-metamorphic province, while a sphene-apatite-zircon assemblage is indicative of acid or intermediate rock-types as sources of supply, whereas an ilmenite-anatase-rutile-brookite association points to derivation from basic or ultrabasic rock-types.

These are, to say the least, highly controversial statements, but they tend to make the subject interesting and to stimulate further work; for, as Mr. Milner very properly remarks, the aim of science should be not merely to collect facts, but to explain them, and to put them to service in the solution of larger problems. The difficulty in this particular case is that the facts available are as yet scanty and very local in their significance. Much patient fact-collecting remains to be done before it can be ascertained whether any given system or series has definite characteristics as regards the nature and mineral composition of its detritus, and what those characteristics are. Not until this work has been done will it be safe to assert that the evidence provided by detrital minerals is useful in any substantial way as a basis of stratigraphical correlation.

T. C.

Universal Problems. By H. Jamyn Brooks. Pp. 123. (Braintree, Essex: The Author, The Limes, Shalford, 1922.)

Review by quotation is not usually desirable, but with books of the class to which Mr. Brooks's belongs it is the only possible method. It will suffice to quote at random three of the eight "hypotheses on which the theories discussed in the work are founded."

"1. Every element, whether it be chemical, physical or mental, is distributed in unbroken unity throughout universal space."

"5. The mode of progression of the physical forces through matter and space is by communicated combustion, as is illustrated by the ignition of a train of gunpowder."

"7. Energy is the force which becomes manifest through expansion and contraction."

At first we are inclined to be amused, but really such books are tragic, not comic. For Mr. Brooks lacks neither intelligence nor enthusiasm. He has read enormously, and he has actually printed with his own hands the little book in which his views are presented. If only that intelligence and enthusiasm had been combined with the desire and the capacity to study science seriously! If only he had given to a few elementary text-books and a short course of laboratory work the time and application he has given to encyclopædia articles and "popular" treatises! Faced with such results as this, we are forced to ask ourselves whether the "popularisation" of science is all or mainly gain. Has Prof. Eddington, for example, —his book is quoted more frequently than any other— done good to science by arousing the interest of untrained readers, or harm by encouraging the delusion that they can really understand? N. R. C.

Mechanical Testing: A Treatise in Two Volumes. By R. G. Batson and J. H. Hyde. (Directly-Useful Technical Series.) Vol. 1: *Testing of Materials of Construction.* Pp. xiii + 413. (London: Chapman and Hall, Ltd., 1922.) 21*s.* net.

The contents of this volume deal with the testing of materials of construction; the testing of apparatus, machines, and structures will be included in the second volume. The authors have had extensive experience in the National Physical Laboratory, and this is reflected in their book. A large number of engineers in this country are now alive to the importance of continually testing the materials they employ, and to such the volume will be welcome on account of the information it contains regarding modern methods of testing. The student will also find the book useful, since no college laboratory contains all the apparatus described, and text-books on materials usually have only brief sections on the apparatus employed in testing. The greater part of the volume is devoted to the testing of metals; besides the ordinary simple commercial tests, we find chapters on the repetition of stress, combined stresses, hardness testing, impact testing, and the effects of temperature. The book closes with chapters on the tests of timber, stone, brick, concrete, road materials, limes, and cements. Sufficient information is given regarding the results of methods of testing to enable the experimenter to compare his own results with average values for trustworthy materials.

© 1922 Nature Publishing Group

The book represents a large amount of work, not merely on account of its actual contents but also on account of the number of original papers which had to be consulted. This is evidenced by the copious references at the end of each chapter. The authors are to be congratulated on the success with which they have accomplished their task.

Artificial Limbs and Amputation Stumps: A Practical Handbook. By E. Muirhead Little. Pp. vii + 319. (London: H. K. Lewis and Co., Ltd., 1922.) 18*s.* net.

No surgeon who may be called upon to amputate a limb can afford to disregard the problem of fitting a prosthetic appliance to the resulting stump. Mr. Muirhead Little has recorded his conclusions, based on a wide experience in fitting artificial limbs, and his book will undoubtedly take its place as a standard work of reference on the subject in English surgical literature.

The chapter on amputation stumps is of great importance; in it the author describes the characteristics of a good stump, the conditions which prevent or delay the fitting of prostheses, and the best methods of dealing with such conditions. The actual descriptions of artificial limbs are mainly those of the British Official Prostheses, *i.e.* appliances supplied by the Ministry of Pensions. Arms are classified according to the work required to be done, and again according to the amputation region. Lower limbs are grouped corresponding to the site and type of amputation. The book is very well illustrated and is complete in its attention to details outside the actual fitting of the limb, *e.g.* the preservation and repair of the artificial leg, and the re-education of the patient. The appendix contains specifications of artificial limbs, and directions for making certalmid sockets and for fitting the light metal leg.

Industrial Nitrogen: The Principles and Methods of Nitrogen Fixation and the Industrial Applications of Nitrogen Products in the Manufacture of Explosives, Fertilizers, Dyes, etc. By P. H. S. Kempton. (Pitman's Technical Primer Series.) Pp. xii + 104. (London: Sir I. Pitman and Sons, Ltd., 1922.) 2*s.* 6*d.* net.

MR. KEMPTON has provided a very brief but readable account of an important industry which has grown up within the last ten years. The descriptions of the processes are necessarily very sketchy, but enough information is given to enable one to form a reasonably accurate picture of the present state of affairs—one which, it may be mentioned, is by no means to the credit of this country. Several minor inaccuracies were noted. The yields of the various arc furnaces given on p. 15 are not the real figures. The Claude process is not the only one largely used for the manufacture of nitrogen (p. 32). Copper formate, not chloride, is used for the purification of hydrogen in the Haber process (p. 45). "Rev. A. Milner, 1871" should be "Rev. I. Milner, 1788" (p. 64). The "Ostwald-Barton system" of ammonia oxidation (p. 67) is quite adequately described by the first of the two names, and the statement that in it "a catalyst of secret composition is used instead of platinum," although it appears to have been spread abroad for the information of the credulous, is wholly without foundation.

The Beloved Ego: Foundations of the New Study of the Psyche. By Dr. W. Stekel. Authorised Translation by Rosalie Gabler. Pp. xiv + 237. (London: Kegan Paul, Trench, Trubner and Co., Ltd., 1921.) 6*s.* 6*d.* net.

DIFFERENT aspects of life, such as the fight of the sexes, psychic opium, the fear of joy, the unlucky dog, to select but a few, are some of the topics of the series of essays which constitute this book. Each chapter discusses special symptoms which, in particular cases, reveal that the personality has been thrown out of perspective, and the proffered solution is that love of the self is the fundamental cause of the disturbance. Love at first sight is love of the self as reflected in another, and even the person who is always disproportionately unlucky is so, because his self-love demands that he must be unique in some one direction. The author admits his indebtedness to the work of Freud, and regards it as a step towards a new psychotherapy, but believes that sexuality has been overemphasised by Freud's followers. He aims at showing the part played by the self. The essays are in popular form and are certainly interesting and embody much sound advice.

A Textbook of Organic Chemistry. By Prof. J. S. Chamberlain. Pp. xliii + 959. (London: G. Routledge and Sons, Ltd., 1922.) 16*s.* net.

PROF. CHAMBERLAIN'S textbook follows the usual lines. Only important compounds are described, and attention is directed to the general relationships between groups of compounds. The style is clear and the matter well arranged, so that students beginning the serious study of organic chemistry should find the book of value, especially if supplemented by lectures, as the author intended. The printing and paper are good. From the large number of elementary textbooks on organic chemistry which have appeared recently one might be led to infer that some new methods of teaching the subject had been evolved. This does not seem to be the case.

(1) *Industrial Motor Control: Direct Current.* By A. T. Dover. (Pitman's Technical Primer Series.) Pp. xi + 116. (London: Sir I. Pitman and Sons, Ltd., 1922.) 2*s.* 6*d.* net.
(2) *Switching and Switchgear.* By H. E. Poole. (Pitman's Technical Primer Series.) Pp. ix + 118. (London: Sir I. Pitman and Sons, Ltd., 1922.) 2*s.* 6*d.* net.
(3) *The Testing of Transformers and Alternating Current Machines.* By Dr. C. F. Smith. (Pitman's Technical Primer Series.) Pp. xi + 91. (London: Sir I. Pitman and Sons, Ltd., 1922.) 2*s.* 6*d.* net.

(1) MR. DOVER'S object in his book is to discuss the principles involved in the starting and speed control of direct current motors. The principles are applied subsequently to typical control apparatus. The diagrams are well drawn and the descriptions are clear.

(2) The elementary considerations which have to be taken into account when designing apparatus for the switch-control of electric circuits are well described in Mr. Poole's book. It will form a useful introduction to more technical treatises.

(3) Dr. Smith's book will prove useful to students, and to engineers who want to revise their knowledge.

© 1922 Nature Publishing Group